

We claim:

Claims

1. A bridge fitting for use in a fluid manifold system for being in fluid communication with two or more surface mounted fluid components having an inlet port and an adjacent outlet port, the bridge fitting comprising:

a housing further comprising a first port connected to a second port, with an internal fluid passageway joining said first and second port; and at least one projection extending from the housing.

2. The bridge fitting of claim 1 further comprising a second projection extending from the housing.

3. The bridge fitting of claim 1 wherein the second projection is located opposite the first port.

4. The bridge fitting of claim 2 wherein the second projection has a size different than said first projection.

5. The bridge fitting of claim 2 wherein the second projection has a different shape than said first projection.

6. The bridge fitting of claim 1 wherein said first projection comprises a boss extending from a lower surface of said housing.

7. The bridge fitting of claim 2 wherein said second projection comprises a second boss extending from a lower surface of said housing.

8. A bridge fitting for use in a fluid manifold system for being in fluid communication with two or more surface mounted fluid components having an inlet port and an adjacent outlet port, the bridge fitting comprising:

a housing further comprising a first port connected to a second port, with an internal fluid passageway joining said first and second port; said first and second ports further comprising a recessed cavity and a seal positioned within said recessed cavity; wherein said seal is squeezed within said cavity thereby retaining said seal within said cavity.

9. The bridge fitting of claim 8 wherein said cavity is circular, and said seal is an O Ring having a diameter greater than the diameter of the cavity.

10. The bridge fitting of claim 8 wherein said cavity has a bottom wall angled with respect to a sidewall in the range of about 60 to about 70 degrees.

11. The bridge fitting of claim 8 wherein said cavity has opposed flat sidewalls having a spacing less than a dimension of said seal, thereby retaining said seal within said cavity.

12. A modular fluid system for connecting with two or more surface mount type fluid components each having an inlet port and an adjacent aligned outlet port, the modular system comprising:

one or more bridge fittings, wherein each of said bridge fitting comprises a housing and a projection extending from said housing;

a channel block having a groove for receiving said bridge fitting therein and an aligned complementary shaped hole for receiving said projection; said complementary shaped hole and said projection being in a cooperative relationship so that a port of said surface mount fluid component is aligned and in fluid communication with a port of said bridge fitting.

13. The manifold system of claim 12 wherein said projection comprises a boss extending from a bottom surface of said housing, and said aligned hole is located on a bottom wall of said channel.

14. The modular fluid system of claim 12 wherein said bridge fitting further comprises a second projection extending from said housing and an aligned complementary shaped hole for receiving said second projection, wherein said second projection is different than said first projection.

15. The modular fluid system of claim 12 wherein said system further comprises two channel blocks and a connector block for joining said channel blocks together; said connector block being sized to maintain the surface mount valve spacing.

16. The modular fluid system of claim 12 wherein said first projection of said bridge fitting comprises a first shape extending from a side of the bridge fitting housing, and said channel block having an aligned slot in a sidewall for receiving said first shape.

17. The modular fluid system of claim 12 wherein said first projection is sized to be retained in said hole of said channel block when the channel block is in a vertical orientation.

18. A modular fluid system for connecting with two or more surface mount type fluid components each having an inlet port and an adjacent aligned outlet port, the modular system comprising:

one or more bridge fittings, wherein each of said bridge fitting comprises a housing and a first and second projection extending from said housing, wherein said first and second projections are different from each other;

a channel block having a groove for receiving said bridge fittings therein, said groove further comprising a first and second complementary shaped hole for receiving said first and second bridge fitting projections, wherein said bridge fitting ports are aligned with the respective ports of said surface mount fluid components.

19. A modular fluid system for connecting with two or more surface mount type fluid components each having an inlet port and an adjacent aligned outlet port, the modular system comprising:

an end bridge fitting, wherein said end bridge fitting comprises one or more flat surfaces extending from said housing;

a channel block having a groove for receiving said end bridge fitting therein, said channel block further comprising anti-torque means for preventing rotation of said end bridge fitting.

20. The modular fluid system of claim 19 wherein said bridge fitting flat surface further comprises opposed flats of a hex nut and the anti-torque means is a slot located on an end of the channel block aligned for reception with the opposed flats of said hex nut.

21. The modular fluid system of claim 19 wherein said anti-torque means is a lock down bar having a flat surface for engaging said bridge fitting flat surface.

22. A modular surface mount check valve comprising:

a valve body having a mounting flange connected thereto;

said flange being substantially planar and having an inlet passage located about the center of said flange and an outlet passage located adjacent said inlet passage, wherein said inlet passage and said outlet passage having a respective inlet orifice and an outlet orifice located on a common plane; said body further comprising a valve chamber in fluid communication with said inlet passage and said outlet passage; said chamber further comprising a valve seat formed at the juncture of said inlet passage and said chamber; a poppet positioned in said chamber;

a spring mounted in said valve chamber for biasing said poppet towards said valve seat.

23. The valve of claim 22 further comprising a poppet stop positioned between the spring and the poppet.

24. An air actuated surface mount flow control valve comprising:

a valve body having a mounting flange connected thereto;

said flange being substantially planar and having an inlet passage located about the center of said flange and an outlet passage located adjacent said inlet passage; said body further comprising a cavity in fluid communication with said inlet passage and said outlet passage a T shaped stem positioned in said cavity,

a spring mounted in said cavity for biasing a first end of said stem in sealing engagement with said inlet passage and said outlet passage;

said stem further comprising an internal fluid passageway in fluid communication with an actuator fluid compartment located under a lower surface of said stem, and said external source of pressure.